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CHAIRMAN'S REPORT FOR 1982 - JOHN KARMALI

The Chairman opened his report by welcoming all those present at the 73rd Annual General Meeting. He said that he always looked forward to giving his report, but this year he had some reservations in view of the crisis the Society had been going through in recent months.

He began by summarizing the position regarding the *Birds of East Africa*. It seemed that after nearly three years, the matter of printing, publishing and paying for this book was coming to a conclusion. There were two main reasons for this long delay. Firstly, Printpack had wanted to charge as per the original quotation for a 400 page publication, whereas in actual fact the book had a total of only 318 pages. This argument was not resolved satifactorily until January 1983 after prolonged negotiations. The second problem was that there were so many faulty copies out of the 4 886 delivered that it had been necessary to check every one of them. This arduous task had resulted in 800 copies being rejected. 620 of these had been returned by the printers as having been rectified, but these still had to be checked. It was hoped that the final accounting for this publication would appear in the 1983 balance sheet.

Birds of East Africa was one of the products of the Ornithological Sub-committee, which continued to function most effectively with *Scopus* and the Annual Bird Report appearing regularly.

The extension of the Library was almost complete, and at long last the valuable book collection of the Society was adequately housed. The Chairman urged members to visit the Library and see it for themselves. Most of the finances for the extension had been provided by the Canadian High Commission, but the National Museums had also provided some funds to complete the work. It was also hoped that the latter would soon start a bindery.

The Kenya Bird Atlas Scheme was making good progress, as was clear from the regular reports in the *Bulletin*, under the able guidance of Dr Adrian Lewis and Dr Derek Pomeroy. Many members had supported the project enthusiastically. World Wildlife Fund, Kenya had generously donated Sh.40 000 towards the cost of this work.

Mrs Lise Campbell had carried out her task as the Functions Organizer with her usual efficiency and dedication, and interesting programmes had been arranged throughout the year. However, members were urged to continue to help her by suggesting interesting speakers and organizing field and camping trips.

The appointment last year of two new Joint Editors of the *Journal*, Ms Shereen Karmali and Mr Michael Core had proved highly successful. So many issues had been published in such a short time that they had to be restrained eventually because of financial limitations! They had kindly agreed to continue this year.

On a disappointing note, the membership had dropped from 830 in 1981 to 810 for 1982. Although not serious, this emphasized the need for continuous effort on the part of all members to enrol new members. Because of the problem of the Hon. Secretary and the consequent non-opening of the office for three months at the end of last year and the beginning of this year, enrolment of local full members had dropped to 349 from 439 for the corresponding period last year, and this fall required an extra special effort from everybody to bring the numbers up to par.

The 1982 A.G.M. had been asked for a mandate to increase the annual subscription for 1983 to Sh.100. Unfortunately, due to the crisis mentioned earlier, it had not been possible to implement this, although the Executive Committee had every intention of doing so. It was therefore necessary to ask for a renewal of this mandate for 1984. There was little doubt that the subscription would have to be increased then, in view of the substantial increase in postal charges and other expenses. It was to be noted that the subscription had remained at Sh.70 for the past four years. (The mandate to increase the subscription was renewed by the meeting.)

Thanks were due to all members of the Executive Committee who had been most willing and helpful throughout the year. Those with specific jobs, not mentioned earlier, were Mike Clifton, Editor of the *Bulletin* for some years, who was now resigning from the Committee; Graeme Backhurst and Barry Taylor for their work on the Bird Ringing Scheme and the Nest Record Scheme respectively, and Christine Taylor as Hon. Librarian. The Chairman acknowledged his special gratitude to the Vice-Chairman John Kokwaro for his continuous support and help, particularly during the somewhat trying conditions in recent months.

From names proposed for this year's Executive Committee, a number of very familiar ones had disappeared. They deserve our appreciation for the many years devoted voluntary service to the Society. They are Jean Hayes, Denise Angwin, Mrs Eileen Angwin and Mike Clifton.

The Chairman then went on to talk briefly about the crisis situation which had arisen. It was not his intention to go into long details, but the members were entitled to know something of the problems, which the Executive Committee had been faced with and had overcome. As mentioned earlier, the Hon Secretary/Treasurer, Miss Denise Angwin, who had done an excellent job of work for many years, suddenly stopped attending meetings of the Executive Committee in July 1982, with the consequence that its decisions were not followed through. In December 1982 the office ceased to function and Miss Angwin could not be contacted for an explanation, despite many efforts by members of the Committee to see her. In February 1983 it decided to take over from her and the Chairman agreed to act as Secretary, Treasurer and general factotum to put the affairs of the Society in order with the help of other members of the Executive.

It was soon discovered that many of the accounting books, bank statements and records were missing. It was only after threatening legal action that some of these items were recovered. It was also found that no entries for 1982 had been made in the account books. It required weeks of work to investigate and write these up, especially as there was insufficient information available. Eventually the books were made ready as far as possible and handed over to the Hon. Accountant and Auditor Mr A. Simpson, only twelve days before the A.G.M. for him to complete the investigation and draw up a balance sheet. The draft of this was ready for typing, cyclostyling and distribution on the morning of the 18th April 1983. Special thanks were due to Mr Simpson, the Certified Public Accountant, for his co-operation and help, without which it would have been impossible to submit the accounts on the due date. In the event, the hard work put in by everybody had paid off and certified accounts were ready for submission at the Annual General Meeting.

The office had begun to function effectively from 1st March with Mrs D. Backhurst as Acting Secretary, and it was heartwarming to see the many volunteers who rallied round to help. A January - April *Bulletin* had been produced and distributed with their assistance, and a new computer address system was put into operation to ease the workload of dispatching the *Bulletin*. A generous and surprise donation from the Frankfurt Chamber of Commerce had paid for this system.

The outgoing Chairman then ended his report on a personal note. He felt that it was desirable for him to stand down this year as he had been Chairman for the last fourteen of his eighteen years on the Executive Committee. He was very happy to hand over to Professor John Kokwaro who had been his Vice-Chairman since 1977. He was sure that under his successor the Society would go from strength to strength. But he would no doubt have a different approach and go his own way, as it should be. He assured members that he had no intention of cutting himself off from the Society of which he was a

Life Member and which was so close to his heart.

For him these had been very rewarding years and if anything has been achieved in the fourteen years of his chairmanship, the credit for this had to be shared with all members of the Society and particularly with the Executive Committee whose members had given him unstinting help and co-operation without which the achievements would not have been possible.

The Chairman concluded his report by thanking everybody once again.

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JOURNAL OF THE EAST AFRICA NATURAL HISTORY SOCIETY AND NATIONAL MUSEUM

A NEW SYSTEM FOR DISTRIBUTION

Enquiries have shown that only a very few members of the Society wish to receive every issue of the *Journal*. Unlike the *Bulletin* the majority of papers are on very specialised subjects and are of interest to only a a handful of members. Until now every member has automatically received copies of the *Journal*. This has been expensive in both printing and postage. With effect from 1 September 1983, details of forthcoming issues of the *Journal* will appear in the *Bulletin* (which, of course, every member will continue to receive) and members who wish to receive that particular paper will be asked to complete a tear-off slip and return it to the Secretary. A copy will then be supplied. Any member who wishes to continue to receive all issues of the *Journal* is requested to notify the Secretary before September.

The Committee believes that the savings made will enable the Society to publish more scientific papers, which may be of limited general interest but are of importance to research workers.

Institutional members will continue to receive all issues of the *Journal* since these are mainly placed in scientific libraries.

THE BIRD LUNG: HOW IS IT MADE AND HOW DOES IT WORK?

Flight is a very highly energetically demanding form of exercise. For example, a Budgerigar *Melopsittacus undulatus* flying at sea level uses oxygen at almost twice the rate of a mouse of similar weight running hard. Although bats can, over short distances, fly as well as birds, birds undoubtedly excel in high altitude and sustained flight. The most notable feats of bird flight are the 3 300 km non stop flight of the migrating American Golden Plover *Pluvialis dominica*, the pole to pole flight of the Arctic Tern *Sterna paradisea*. Even more astounding is the trans-Himalayan flight of the Bar-headed Goose *Anser indicus* from sea level up to 9 200 m without acclimatization.

The capacity to fly, in search of food, to escape predators, or adverse weather conditions has enabled birds to exploit diverse ecological niches. This has consequently lead to varying anatomical adaptive radiation especially in locomotion and feeding. This variation has lead to there being as many as about 9000 species of birds as compared to only about 6000 of mammals and about 4500 amphibians. However, the anatomical requirements of flight are so restrictive that the total number of known species of birds exhibit less anatomical variation than the 90 species of Primates and 290 of Carnivora.

Although the anatomy of the avian lung has been well documented for a long time, the function is not, up to now, as equally well understood.

STRUCTURE

The trachea ends at the syrinx. The syrinx gives rise to the right and left extrapulmonary primary bronchus which course into the substance of the lung. The lungs are flattened rather compact quadrilateral structures which are situated in the dorsal part of the cranial end of the coelomic cavity. They usually extend from the rib which arises from the last cervical vertebra, to the cranial part of the ilium. The dorsal *facies vertebralis* and the lateral *facies costalis* surfaces are deeply indented, typically into 4 to 6 grooves *costal sulci* by the corresponding number of ribs. The liver, and not the lung as in mammals, surrounds the heart.

The intrapulmonary part of each primary bronchus gives rise to four groups of secondary bronchi. The medioventral and mediodorsal secondary bronchi are directly connected to each other by a large number of elongated hoop-like parabronchi. This system of secondary bronchi and parabronchi forms about two thirds of the lung and has been called the paleopulmo. The lateroventral and laterodorsal secondary bronchi are smaller in diameter than the other two groups of secondary bronchi; their parabronchi are short and have many side to side anastmoses, thus forming a network of airways which has become known as the neopulmo.

The paleopulmo is present in all birds. In supposedly primitive birds (e.g. Penguins) it forms the whole of the lung. The neopulmo is present in most birds, and then constitutes one third of the lung. A parabronchus is made up of a central lumen and the surrounding exchange tissue mantle. Pocket-like atria open from the parabronchial lumen, and lead into funnel-like infundibula. The infundibula continue directly into the air capillaries. These radiate into the periphery of the parabronchus, branching and anastomosing repeatedly, and profusely interlacing with blood capillaries. The air capillaries and blood capillaries constitute the mantle of exchange tissue, and are the functional units where gas exchange takes place.

Each air sac is connected to the pulmonary airways at an ostium. The air sacs are divided on functional grounds into a cranial group (the cervical, clavicular and cranial thoracic air sacs) and a caudal group of air sacs (the caudal thoracic and abdominal air sacs). The individual air sacs are either entirely or mainly intracoelomic, some of them being partly extracoelomic also. This general lung-air sac system design is unique to birds, and is

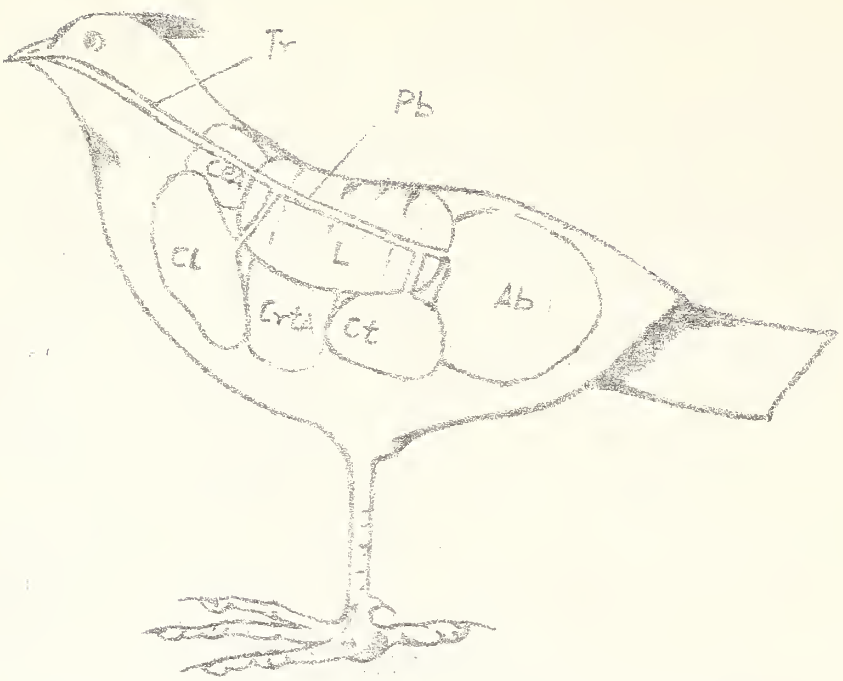

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Fig. 1 shows the lung (L) connected to the air sacs at the ostia. On functional grounds the air sacs can be divided into the caudal group; the abdominal air sac (Ab) and the caudal air sac (Ct). The cranial air sacs comprise the cranial thoracic air sac (Cr tA), the clavicular air sac (Cl) and the cervival air sac (CeA). Most of the air sacs are paired but this varies from species to species. The air moves into the air sacs through the trachea (Tr) and the primary bronchus (Pb).

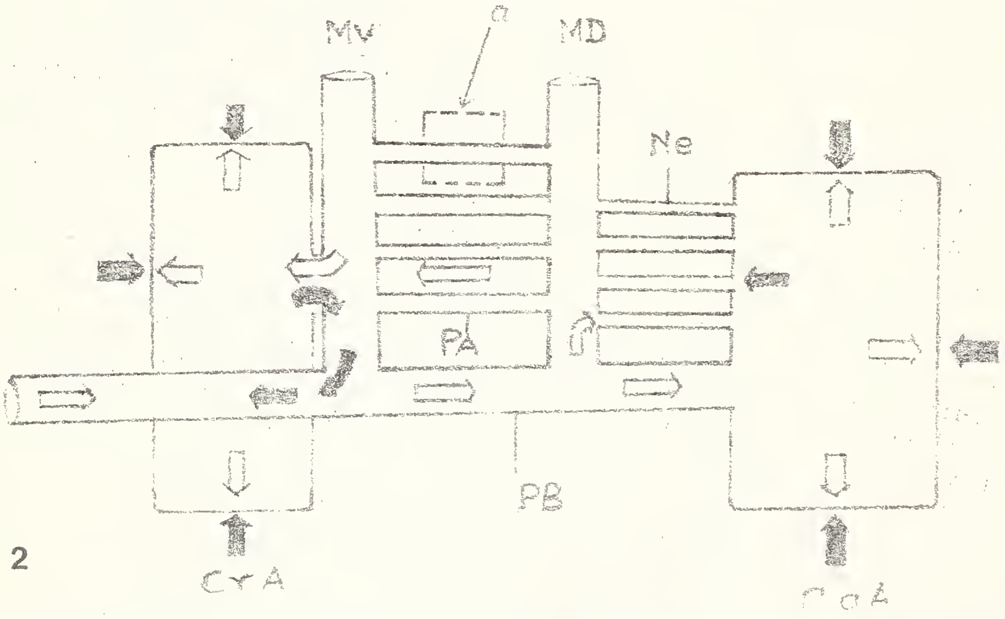

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Fig. 2 shows the air flow pattern of the avian lung. Inspired air moves into the caudal air sacs (CaA) through the primary bronchus (PB), some of it passing through the parabronchi of the neopulmo (Ne). During this phase of respiration the stale air in the secondary bronchi, mediodorsal (MD), the medioventral (MV) and the interconnecting parabronchi of the paleopulmo (PA) moves into the cranial air sacs (CrA). During expiration the air in the caudal air sacs moves into the bronchial system and the used up air in the cranial air sacs is voided through the trachea. Open arrows indicate air during inspiration and closed arrows air during expiration.

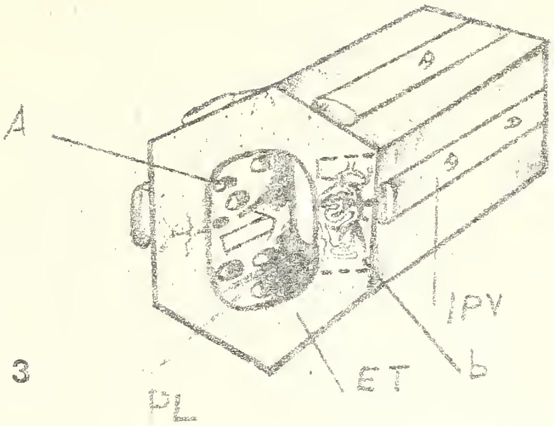

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Fig. 3 shows an individual parabronchus (a) from Fig. 2. The air moves in the parabronchial lumen (PL), diffusing radially into the exchange tissue through the atria (A), into finer channels called infundibula and finally into the air capillaries where the gas exchange takes place in the gas exchange tissue mantle (ET). (IPV) shows the interparabronchial vein and indicates the bulk parabronchial airflow

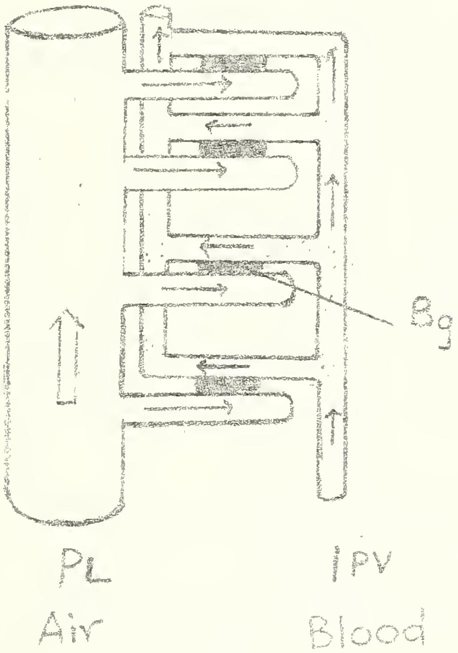

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Fig. 4 is an enlargement of (b) in Fig.3. The bulk air flow in the parabronchial lumina (PL), diffusing into the exchange tissue meets the incoming deoxygenated blood from the periphery of the parabronchi in the interparabronchial vein (IPV). The oxygen diffuses across the blood gas barrier (Bg). This relationship of the bulk parabronchial gas flow to the blood flow has been termed cross-current (modified from Scheid (1979) Rev. Physiol. Biochem. Pharmacol: 86).

only vaguely typified by some species of reptiles exhibiting unicamel lungs.

FUNCTION

The avian lung is a relatively inexpansible organ, unlike the mammalian lung which changes its volume during every respiratory cycle. The diaphragm as a partition between the abdominal and thoracic cavity is totally absent. A change in size of the coelomic cavity brought about by the movement of the rib cage and sternum (under the influence of the abdominal muscles) causes pressure changes in this cavity, this consequently brings about inflation and deflation of the voluminous air sacs. The nature of the movement of the air through the avian lung has been subject to a lot of controversy. It is now generally agreed that during the inspiratory cycle the air moves through the primary bronchus into the caudal air sacs, while the stale air within the gas exchange passages of the lung moves into the cranial air sacs. During the expiratory cycle the air in the caudal air sacs moves into the gas exchange passages while the air within the cranial air sacs is voided through the trachea to the outside. The air sacs thus act as bellows which ventilate the lung.

The important features to be noted in the functional design of the avian lung are: the air flow through the main parabronchial gas exchange tissue is unidirectional and continuous during the two phases of respiration, thus there is no breath holding as in the mammalian lung. During the inspiratory cycle the fresh air does not move into either the mediodorsal or the medioventral secondary bronchi, though no anatomical valves have been discerned. The aerodynamic regulation of the air-flow pattern in the avian lung is presumed to be controlled by the nature of the orientation of the secondary bronchi to the primary bronchus, as this unidirectional flow pattern occurs not only in the live bird but also in the dead lung. The blood flow into the exchange tissue is centripental (essentially at right angles) to the air flow. This pattern of gas exchange has been termed cross-current. It has now been shown that this avian design is superior to the so called uniform pool of the mammals as the blood can pick up much more oxygen. The author has now conclusively shown that not only could the high capacity of the avian lung to absorb oxygen be attributed to the cross-current design, but the bird lung is also well structurally adapted in having a thin and extensive blood-gas barrier, and a high pulmonary blood volume all of which increases the pulmonary diffusing capacity of the bird lung. It is also known that birds have relatively large hearts and consequently high cardiac output. In addition, birds have a comparatively large tidal volume such that the air in the exchange passages can be replenished in a single respiratory cycle.

Taking all these features into account is it surprising that birds have been so successful in meeting the respiratory demands of flight.

This article is dedicated to Professor A.S. King for introducing me to the interesting world of avian pulmonary morphology.

Dr J.N. Maina, Department of Veterinary Anatomy, University of Nairobi.
Box 30197, Nairobi.

NOTICE TO ANYONE INTERESTED IN BIRDS

Are you a birdwatcher/photographer/ringer newly arrived in Kenya, and in search of details of local birds, good areas to visit, relevant literature and ringing and other research schemes? Contact Adrian D. Lewis (Geology) Box 30197, Nairobi for information.

SWARM OF *XENOPUS* IN LAKE NAIVASHA

While camping at the Safariland Hotel on Lake Naivasha during the last week of April 1982, I noticed an enormous concentration of *Xenopus*. The toads were coming up to the surface of the water for air from quite a small area, only a few metres wide, on either side of the end of the jetty. A toad would rush up to the surface and thrust its head out of the water, snatch a mouthful of air, immediately flip backwards under the surface, then turn over and dive. Each toad broke the surface for much less than a second. There was a continuous traffic of toads coming up, such that there must have been hundreds if not thousands of them under the water.

When a boat engine was started up or passed nearby, the toads would stop coming up for about three minutes, and a mass of gas bubbles rose instead - presumably the toads were all burying themselves in the mud at the bottom. Where the toads were active the water was muddy and rather opaque, but beyond the edge of their patch the water was more transparent and a vast shoal of young *Tilapia* were swimming there, keeping just clear of the toads. The water was about 1 m deep, and the bottom was sand under a layer of soft mud.

I first noticed the toads at 3.30 p.m. and they were still coming up at 5 p.m. At 10 p.m. however, all was quiet. By 8 a.m. the next morning they were already active again. One of the boatmen told me that the toads had appeared about a week before, and that he had not previously seen them swarming like this.

I have never seen such a concentration of *Xenopus* before. Does anyone know the reason for it? Does it occur at particular times of the year? Does it occur in other lakes or ponds?

Jo Darlington, c/o National Museums, Nairobi.

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GOLIATH BEETLE

On 10 February 1983 a man brought a male Goliath Beetle *Goliathus goliathus* or *Goliathus giganteus* to the biology department of AUEA. The beetle had been found in the North Nandi Forest and is a perfect specimen. We kept it alive for more than a month by feeding it with bananas. Head and body length is 94 mm. The body is 45 mm wide, the head is 21 mm long and 15 mm wide. The foreleg is 75 mm long, foreclaws 7 mm from base to tip and very curved, the hindleg is 60 mm long. Elytra are dark reddish brown with white anterior margins. The head is white with black horns of short, strong, forward pointing knobs shaped like the top of a Y with up-turned tips. The beetle weighed 31.03 g when we first got it. I tested its strength by placing the beetle on a softboard with a hole in it and putting a wire loop attached to a tin with stones in it over the horns of the beetle's head and then over the middle of its body. On 24 February it lifted 782.2 g with its head and 1 104 g with its body. That is 25 times its own weight lifted with its head and 35 times its own weight lifted by the whole body. This beautiful insect could probably have done more under better conditions than we provided.

Larry Siemens, Biology, Adventist University of Eastern Africa,
Box 2500, Eldoret.

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CORRECTION

EANHS Bulletin 1983: 34. Side Striped Jackal. For Lappet-faced culture read Lappet-faced Vulture.

TERMITES

On June 13 we listened to a fascinating lecture by Dr P.E.C. Darlington on Termites, particularly exemplified by *Macrotermes michaelseni*, which she has been studying for several years at Kajiado. Many animals are social, indeed we ourselves are, but a single human being can live for a long time if food is available, and a pair, under for instance pioneering conditions, can not only live but reproduce. Termites however have carried the socializing process to such lengths that not only the way of life, but the anatomy and physiology of the insects has been so changed and adapted in the interests of the community that a single termite cannot possibly live alone. Only at set intervals are a brood of more or less normal insects produced, with wings, which leave the mound with the idea (if one can use such a word) of spreading the race of Termites far and wide and colonizing new areas.

In the whole animal Kingdom only two creatures have developed this style of life, both insects - the Termites (Isoptera) and a section of the Hymenoptera, Ants, Bees and Wasps, particularly the Ants. To find anything at all resembling it, we must look at some marine creatures, sponges and corals. Ants and Termites are not related and seem to have developed similar ways of life by a process of convergent evolution

One great difference between Termites and Ants is that the former are vegetarian and the latter carnivorous. It has been calculated that in an area of dry bushland, like that round Kajiado, the sheer biomass of Termites may equal that of the other herbivores living there. A flourishing nest may comprize many millions of individuals and there are many nests.

We have heard from other lecturers how in a poor area the different species of wild herbivores tend to exploit different types of food plants at different stages of growth, so that much more efficient and thorough use is made of the available nourishment than would be made by domestic cattle. Termites exploit a type which is useless to the others, dead wood and dead and broken grass stems and such other dry and indigestible remains. Only in times of famine do they eat live wood or the roots of living grasses. The process of turning this material into animal tissues is a biochemical problem of great complexity.

The soldier "castes" (as they are called by analogy with the most rigid social system we know), the Queens and the larvae cannot feed themselves and therefore are fed by the workers. The food given them seems to be entirely liquid. Digestion is aided by the cultivation of fungus gardens. The workers eat the dead material and out of it produce a kind of faeces on which the fungus grows. They then eat the fungus and produce the nourishing fluid on which they feed the rest of the community.

Another fact of which, I think, few of us are aware, is that Termites are territorial. Round each mound is an area criss-crossed with passages at various levels along which the foragers travel to collect food material, sometimes up to about 50 m from the nest. The lower passages are smooth and the corners and curves are cambered to make for swift and easy travel. The turnings which approach the surface are rougher and steeper, and at intervals pits are dug in which material can be stored to be fetched later. Termites have no eyes, but they can tell light from dark. Light is dangerous for them and they avoid it, making, even on the surface, tunnels of earth over their foraging area. Where territories meet there may be signs of conflict and passages blocked with dead termites which do not occur elsewhere. So the territories are spaced out, like those of birds, over the available area.

When we come to ask what part Termites play in the ecosystem we seem to see them at the bottom of the food chain. They use what every other animal rejects, and when they have done with it there is very little left for the plants which form the next link in the upward curve. In these baked and sterile soils there is no humus. Perhaps some plant nutrients are concentrated in the mounds. Trees often grow on old dead mounds, and if human beings try to cultivate there they find the soil friable and old mounds broken up are therefore better for growing crops.

Of course other animals eat Termites. Birds have a feast day when the Alates emerge. The form and figure of the Ardvaark is adapted for digging up the nests and licking up the inhabitants and there is little the Termites can do to protect themselves. Perhaps the whole nest will not be destroyed. Some of us may remember the camp that the Society arranged at Kajiado in 1978, when Dr Darlington cut a nest in half for us to see the internal structure. I for one was amazed when, the next morning, I saw how this huge gash had been sealed over. But their greatest enemy is the terrible "safari" ant *Dorylus*, and elaborate precautions are taken against its bands gaining entrance to a mound. Once they do so that nest is doomed and whenever they and the Termites meet there is all-out war.

P.M. Allen, Box 14166, Nairobi.

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DISCONTINUATION OF LIFE MEMBERSHIP

Your Executive Committee at its meeting on 18 May 1983 resolved that the Society can no longer afford to provide the facility of Life Membership since inflation has rendered the subscription for this virtually negligible over the past few years. Therefore from that date Life Membership Subscriptions will no longer be accepted.

Another factor that should be mentioned is that when the Society has the misfortune to lose one of its Life Members, through natural causes, notification is often not received or inordinately delayed. Thus publications continue to be sent at considerable cost particularly where the address is overseas.

Of course existing Life Members are not affected by this decision and the Society will continue to confer Honorary Life Membership where it is deemed fitting.

Robin and Biddy Davis, Box 61, Nanyuki offer members accommodation at their Colobus Self-help Cottages, these are situated 8 km beyond Nanyuki on the Timau road and consist of two double bedrooms, living room and fully equipped kitchenette. Hot water and mains electricity are provided. Bring your own food though fresh dairy produce, fruit and vegetables in season can be provided. This is a convenient base for exploring Mt. Kenya and is within easy reach of both the Samburu Game Reserve and the Aberdare National Park. For further details and bookings, please write or phone either: Nanyuki 2692 or Nairobi 582555.

WANTED

Secondhand copy of Mackworth-Praed & Grant, 2 Vols. Birds of Eastern and North Eastern Africa. By: Fiona Marshall c/o Archeology Dept, National Museum, Nairobi or Tel. 582652.

Copy of Roberts Birds of South Africa. By: Mr P. Fletcher, Box 43675, Nairobi. Tel. 566737 (home) 21420 (office)

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SOCIETY FUNCTIONS

MONDAY 11th July, 1983: in the Museum Hall at 5.30 p.m. Dr James J. Hebrard of the University of Nairobi, Zoology Department will give an illustrated lecture on "DISTRIBUTION AND ECOLOGY OF CHAMAELEONID LIZARDS IN KENYA".

15 - 17th JULY 1983: Weekend excursion to Bushwhackers nr. Kibwezi - any or all days - please see last issue of the *Bulletin*.

MONDAY 15th August, 1983: in the Museum Hall at 5.30 p.m. Dr M.E. Smalley of the University of Nairobi, Zoology Department will give an illustrated lecture on "MALARIA - THE PARASITE: ITS DISCOVERY AND THE FIGHT AGAINST IT".

26th, 27th and 28th August 1983: Weekend camping excursion by kind invitation of Mr and Mrs P. Barclay. This will be on private land in the Menengai Crater near Nakuru, with plenty of opportunity for bird watching and botany in a spectacular and little known area. Members should be self sufficient with all camping equipment and drinking water. Anyone wishing to take part in this field trip should please fill in the enclosed form and return it to Mrs A.L. Campbell with a stamped self-addressed envelope before 10th August.

3rd - 7th September, 1983: TSAVO RIVER WALKING TOUR. Please see Jan - April issue of the *Bulletin*, for details write to Mrs A.L. Campbell, Box 14469, Nairobi with self-addressed envelope.

MONDAY 12th September, 1983: in the Museum Hall at 5.30 p.m. Our Chairman Professor John Kokwaro will give an illustrated lecture on "ORNAMENTAL PLANTS OF KENYA".

SUNDAY 18th September, 1983: Day excursion to the Embakasi area. More details later.

MONDAY 10th October, 1983: in the Museum Hall at 5.30 p.m. Dr Harvey Croze of UNEP will give a lecture, details of which will be announced later.

20th - 23rd October, 1983: Meru Mt. Kenya Self-Service Lodge. More details in next issue. The road to this beautiful lodge is only passable for 4-wheel-drive vehicles - UNLESS it has been improved by then. We understand improvement is due to take place during July/August.

MONDAY 14th November, 1983: in the Museum Hall at 5.30 p.m. Dr Esmond Bradley Martin will give an illustrated lecture on "THE DECLINE OF THE AFRICAN AND ASIAN RHINOCEROS".

WEDNESDAY MORNING BIRD WALKS: led by Mrs Fleur N'gweno continue. Please meet at the National Museum at 8.45 a.m. sharp.

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CORRECTION

In the report of the Tsavo Walking Safari *EANHS Bulletin* 1983: 15 - 18, the distances should read as follows:

p.16, line 13 - for 5 km read 13 km
p.16. line 23 - for 3 km read 8 km
p.17, line 21 - for 6 km read 15.5 km
p.18, line 13 - for 3 km read 8 km

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THE EAST AFRICA NATURAL HISTORY SOCIETY

Chairman: Prof. J.O. Kokwaro
Vice-Chairman: Dr. A.D. Lewis
Joint Editors: Jl E. Africa Nat. Hist. Soc. Nat. Mus.: M.E.J. Gore, Ms. S. Karmali
Secretary: Mrs. H. Fletcher
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